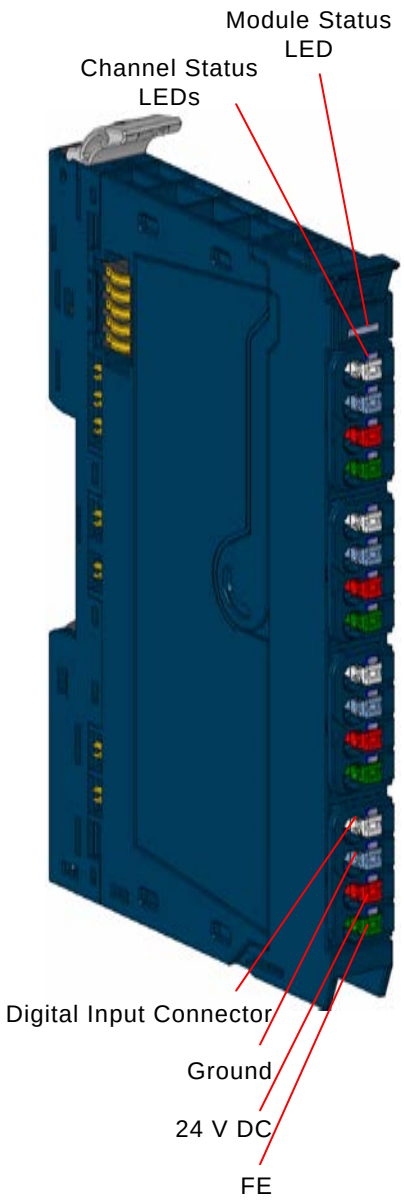
Digital Input Modules
EP-1214, EP-1218, EP-1318, EP-125F
Digital Input Module with Time Stamp
EP-12F4

GFK-2957

November 2015



Digital Input Module

GE provides a range of RSTi-EP digital input modules with 4, 8 or 16 inputs, which are primarily used to receive binary control signals from sensors, transmitters, switches or proximity switches. Their flexible design allows them to meet your demands with reserve potential.

All modules are fully compliant with IEC 61131-2. They can be switched on the input side with type-1 and type-3 sensors in accordance with IEC 61131-2.

The wiring connectors on each module are color coded for ease of wiring. Refer to the section, *Field Wiring* for additional information.

The time stamp module EP-12F4 can detect up to 4 binary control signals and provide them with a time stamp (resolution 1 µs). Depending on the configuration of the module, up to 5 or 15 time stamp entries can be evaluated.

Each module features a type plate, which includes identification information, the key technical specifications, and a block diagram. In addition, a QR code allows for direct online access to the associated documentation. The software for reading the QR code must support inverted QR codes.

Markers are available as accessories for labelling equipment. Each I/O module can be labelled using the markers to ensure clear identification when replacing individual modules or electronic units.

A green *Module Status* LED indicates there is communication on the system bus. Additionally, there are Yellow LEDs for each input to indicate when it is active. Refer to the section, *LEDs* for additional information.

The RSTi-EP station is usually installed on a horizontally positioned DIN rail. Installation on vertically positioned DIN rails is also possible.

Modules should to be allowed to de-energize for a minimum 10 seconds after power down, prior to starting any maintenance activity.

Refer to the *RSTi-EP Slice I/O Module User Manual* (GFK-2958) for additional information.

Refer to the *RSTi-EP Power Supply Reference Guide*, a software utility available on PME V9.00, for detailed power-feed requirements.

Module Features

- Positive Logic
- *Spring style* technology for ease of wiring
- DIN rail mounted
- Double-click installation for positive indication of correct installation
- Up to 16 sensor inputs
- Compatible with type-1 and type-3 sensor inputs per IEC 61131-2
- Time stamping available
- Supports hot insertion and extraction

© 2015 General Electric Company. All Rights Reserved.
* Indicates a trademark of General Electric Company and/or its subsidiaries. All other trademarks are the property of their respective owners.

Ordering Information

Module	Description
EP-1214	Digital Input, 4 Points, Positive Logic 24VDC, 2,3, or 4 Wire
EP-1218	Digital Input, 8 Points, Positive Logic, 24VDC 2 Wire
EP-1318	Digital Input, 8 Points, Positive Logic, 24VDC 3 Wire
EP-125F	Digital Input, 16 Points, Positive Logic, 24VDC, 1 Wire
EP-12F4	Digital Input, 4 Points, Positive Logic 24VDC, 2,3, or 4 Wire, Time stamp

Specifications

	EP-1214	EP-1218	EP-1318	EP-125F	EP-12F4
System Data					
Data	Process, parameter and diagnostic data depend on the network adapter used.				
Interface	RSTi-EP system bus				
System bus transfer rate	48 Mbps				
Inputs					
Channels	4	8	8	16	4
Sensor types	Type 1 and Type 3 sensors as per IEC 61131-2				
Input filter	Input delay adjustable from 0 to 40 ms†			Input delay 3 ms	Input delay adjustable from 0 to 40 ms†
Off voltage	< 5 V				
On voltage	> 11 V				
Max. input current per channel	--	--	--	--	3 mA
Sensor supply	max. 2 A per plug, total max. 8 A	max. 15 mA per channel	max. 2 A per plug, total max. 8 A	No	Yes
Sensor connection	2-wire, 3-wire, 3-wire + FE	2-wire	2-wire, 3-wire	1-wire	2-wire, 3-wire, 3-wire + FE
Reverse polarity protection	Yes				
Module diagnostics	Yes				
Individual channel diagnosis	No				
Supply					
Supply voltage	20.4V – 28.8V				
Current consumption from system current path I_{SYS}	8 mA				
Current consumption from input current path I_{IN}	< 12 mA + sensor supply current	< 30 mA + sensor supply current	< 30 mA + sensor supply current	< 15 mA	< 12 mA + sensor supply current

General data					
Operating temperature	-20°C to +60°C (-4 °F to +140 °F)				
Storage temperature	-40°C to +85°C (-40 °F to +185 °F)				
Air humidity (operation/transport)	5% to 95%, noncondensing as per IEC 61131-2				
Width	11.5 mm (0.45 in)				
Depth	76 mm (2.99 in)				
Height	120 mm (4.72 in)				
Weight	87 g (3.07 oz)	85 g (2.99 oz)	83 g (2.93 oz)	87 g (3.07 oz)	87 g (3.07 oz)
† When used with PROFIBUS-DP network adapter it is limited to 20 ms					

Current Demand for Digital Input Modules

Product	I_{SYS}	I_{IN}	I_{OUT}	I_S	I_L
EP-1214	8 mA	12 mA	--	x	--
EP-1218	8 mA	30 mA	--	x	--
EP-1318	8 mA	22 mA	--	x	--
EP-125F	8 mA	42 mA	--	--	--
EP-12F4	8 mA	< 10 mA	--	x	--

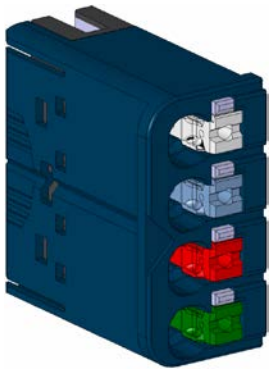
I_{SYS} Current consumption from the system current path
I_{IN} Power consumption from input current path
I_{OUT} Power consumption from output current path
I_S Current demand of the connected sensors
I_L Current demand of the connected actuators
x Must be included when calculating the power supply

LEDs

LED	EP-1214	EP-1218	EP-1318	EP-125F	EP-12F4
Module Status	**Green:** Communication over the system bus **Red:** Module System Fault or Diagnostic Fault				**Green:** Communication on system bus **Red:** No communication on system bus or there is a diagnostic message displayed
1.1	**Yellow:** Input 0 active	**Yellow:** Input 0 active	**Yellow:** Input 0 active	**Yellow:** Input 0 active	**Yellow:** Input 0 active
1.2	--	--	--	**Yellow:** Input 1 active	--
1.3	--	**Yellow:** Input 1 active	--	**Yellow:** Input 2 active	--
1.4	--	--	**Yellow:** Input 1 active	**Yellow:** Input 3 active	--
2.1	**Yellow:** Input 1 active	**Yellow:** Input 2 active	**Yellow:** Input 2 active	**Yellow:** Input 4 active	**Yellow:** Input 1 active
2.2	--	--	--	**Yellow:** Input 5 active	--
2.3	--	**Yellow:** Input 3 active	--	**Yellow:** Input 6 active	--
2.4	--	--	**Yellow:** Input 3 active	**Yellow:** Input 7 active	--
3.1	**Yellow:** Input 2 active	**Yellow:** Input 4 active	**Yellow:** Input 4 active	**Yellow:** Input 8 active	**Yellow:** Input 2 active
3.2	--	--	--	**Yellow:** Input 9 active	--
3.3	--	**Yellow:** Input 5 active	--	**Yellow:** Input 10 active	--
3.4	--	--	**Yellow:** Input 5 active	**Yellow:** Input 11 active	--
4.1	**Yellow:** Input 3 active	**Yellow:** Input 6 active	**Yellow:** Input 6 active	**Yellow:** Input 12 active	**Yellow:** Input 3 active
4.2	--	--	--	**Yellow:** Input 13 active	--
4.3	--	**Yellow:** Input 7 active	--	**Yellow:** Input 14 active	--
4.4	--	--	**Yellow:** Input 7 active	**Yellow:** Input 15 active	--

Field Wiring

The connection frame can take up to four connectors, and four wires can be connected to each connector. The *Spring style* technology allows for either finely stranded or solid wire with crimped wire-end ferrules or ultrasonically welded wires, each with a maximum cross-section of 1.5 mm² (16 guage), to be inserted easily through the opening in the clamping terminal without having to use tools. To insert fine stranded wires without wire-end ferrules, the pusher must be pressed in with a screwdriver and released to latch the wire.



Connector Block with Four Wire Connectors

Note: Image is for illustration of color coding only.

Connector Specifications:

- conductor cross-section 0.14 to 1.5 mm² (26 – 16 guage)
- max. ampacity: 10 A
- 4-pole

The pushers are color-coded for the following connections:

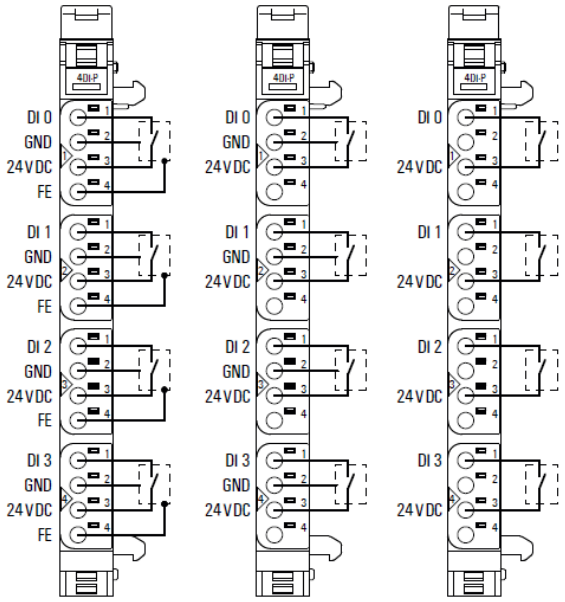
- White Signal
- Blue GND
- Red 24 V DC
- Green Functional earth (FE)

The modules do not have a fused sensor/activator power supply. All cables to the connected sensors/actuators must be fused corresponding to their conductor cross-sections (as per Standard DIN EN 60204-1, section 12).

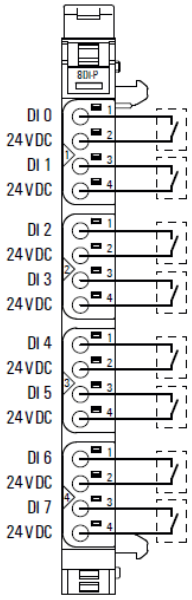
Refer to the *RSTi-EP Slice I/O Module User Manual* (GFK-2958) for additional information.

For technical assistance, go to *http://support.ge-ip.com*.

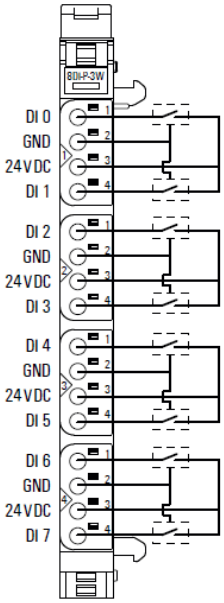
Connection Diagrams



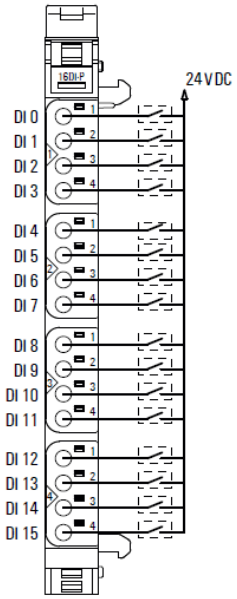
EP-1214 and EP-12F4



EP-1218

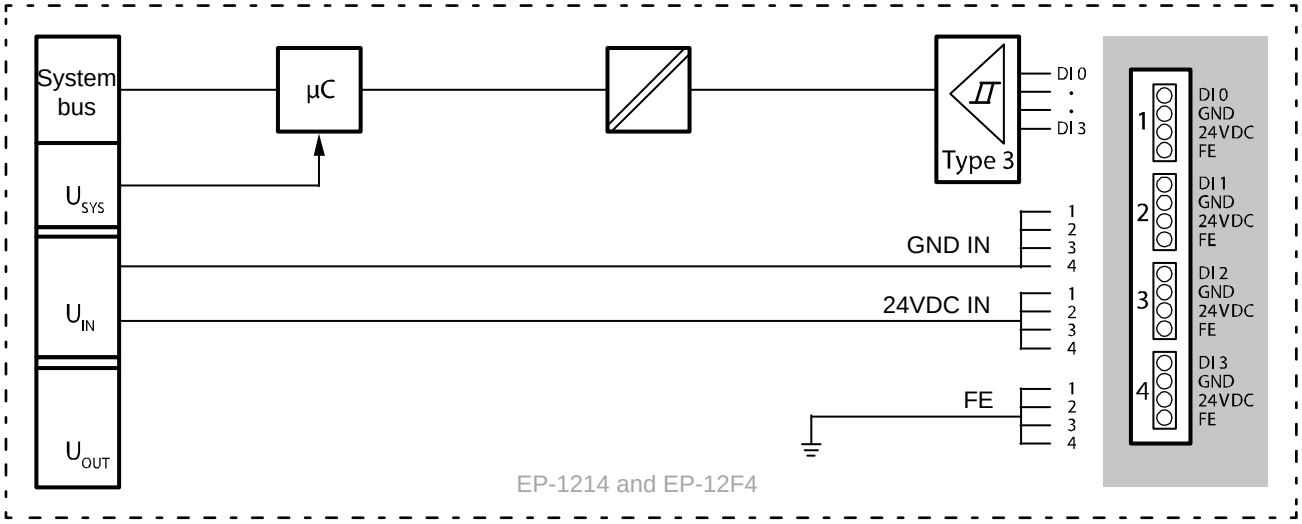


EP-1318

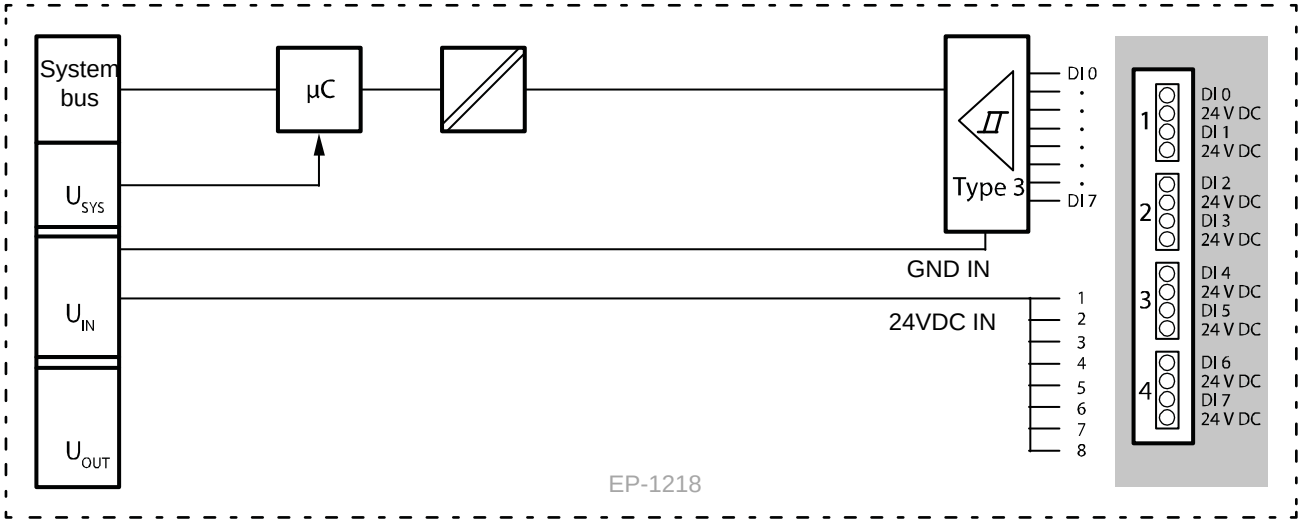


EP-125F

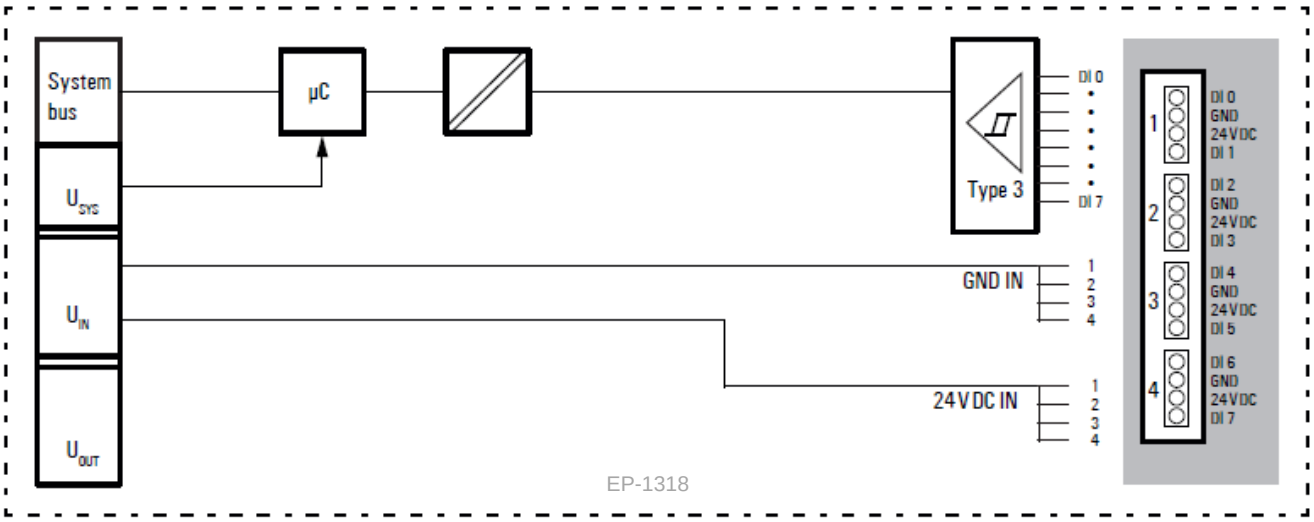
Connection Block Diagrams



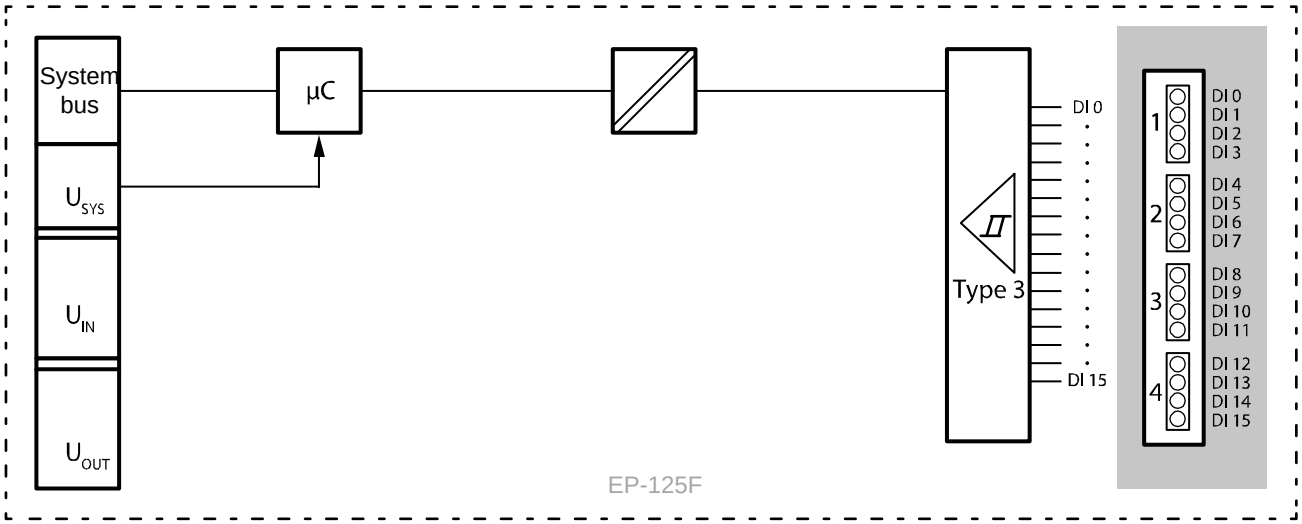
EP-1214 and EP-12F4



EP-1218



EP-1318



EP-125F

Installation in Hazardous Areas

- EQUIPMENT LABELED WITH REFERENCE TO CLASS I, GROUPS A, B, C & D, DIV. 2 HAZARDOUS AREAS IS SUITABLE FOR USE IN CLASS I, DIVISION 2, GROUPS A, B, C, D OR NON-HAZARDOUS AREAS ONLY

WARNING - EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2;

WARNING - EXPLOSION HAZARD - WHEN IN HAZARDOUS AREAS, TURN OFF POWER BEFORE REPLACING OR WIRING MODULES; AND

WARNING - EXPLOSION HAZARD - DO NOT CONNECT OR DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NONHAZARDOUS.

ATEX Marking

Ⓔx II 3 G Ex nA IIC T4 Gc

Ta: -20°C to +60°C (-4° F to +140 °F)

GFK-2757

Release History

Catalog Number	*Firmware Version*	*Date*	*Comments*
EP-1214, EP-1218, EP-1318, EP-125F, EP-12F4	N/A	Nov-2015	Initial Release

Important Product Information for this Release

Updates

Initial Release

Funcional Compatibility

Initial Release

Problems Resolved by this Release

None – Initial Release

New Features and Enhancements

None – Initial Release

Known Restrictions and Open Issues

None

Operational Notes

None

Product Documentation

RSTi-EP Slice I/O Module User Manual (GFK-2958)
RSTi-EP Slice I/O Functional Safety Module User Manual (GFK-2956)